8   (c) selecting new design points for the parameter functions to optimize

9   design parameters within the design constraints.

1   2.   The method of claim 1 wherein the creating the parameter functions

2   comprises:

3   (a1)   configuring each circuit of the plurality of circuits; and

4   (a2)   generating values of design parameters for each circuit according to

5   the configured circuit, the values providing the parameter functions.

1   3.   The method of claim 2 wherein the design parameters include constraint and

2   optimizing sets, the constraint set including constraint parameters having values selectable

3   to meet the design constraints, the optimizing set including optimizing parameters having

4   values to be optimized.

1   4.   (AMENDED) The method of claim 3 wherein selecting the new design

2   points comprises:

3   (c1)   selecting values of the constraint parameters to meet the design

4   constraints;

5   (c2)   determining values of the optimizing parameters corresponding to

6   the selected values of the constraint parameters based on the parameter functions;

7   and

8   (c3)   iterating c(1) and (c2) until values of the optimizing parameters are

9   within a predetermined optimal range.

1   5.   The method of claim 3 wherein the constraint parameters include a delay

2   parameter and the optimizing parameters include a power parameter.

1   6.   The method of claim 5 wherein the design constraints include a delay

2   constraint.

1   7.   The method of claim 6 wherein (a1) comprises:

2   sizing components in each circuit.

1   8.   The method of claim 6 wherein (a1) comprises:

2   selecting a design technology for each circuit, the design technology being one of

3   static and dynamic technologies.

1   9.   The method of claim 7 wherein (a2) comprises:

2   (a21)   generating a circuit netlist representing the configured circuit;

3   (a22)   generating a timing file based on the circuit netlist using a circuit

4   critical path;

5   (a23)   determining power of the configured circuit based on the circuit

6   netlist;

7   (a24)   calculating timing values by using a timing simulator; and

8   (a25)   calculating power values by using a power estimator.

1   10.   The method of claim 9 wherein [optimizing] selecting the new design points

2 comprises:

3   (c1)   selecting values of the delay parameter within the delay constraint;

4   (c2)   determining values of the power parameter corresponding to the

5 selected values of the delay parameter based on the parameter function; and

6   (c3)   iterating (c1) and (c2) until values of the power parameter are within

7 a predetermined optimal range.

1   11.   (TWICE AMENDED) A machine readable medium having embodied

2 thereon a computer program for processing by a machine, the computer program

3 comprising:

4   (a)   a first code segment to create parameter functions for a plurality of

5 circuits in a subsystem, the subsystem having design constraints, each one of the

6 parameter functions corresponding to each one of the circuits, the parameter

7 functions representing a relationship among the design parameters;

8   (b)   a second code segment to select initial design points for the

9 parameter functions to satisfy the design constraints; and

10   (c)   a third code segment to select new design points for the parameter

11 functions to optimize design parameters within the design constraints.

1   12.   (AMENDED) The machine readable medium of claim 11 wherein the first

2   code segment comprises:

3   (a1)   a code segment to configure each circuit of the plurality of circuits;

4   and

5   (a2)   a code segment to generate values of design parameters for each

6   circuit according to the configured circuit, the values providing the parameter

7   functions.

13.   The machine readable medium of claim 12 wherein the design parameters

2   include constraint and optimizing sets, the constraint set including constraint parameters

3   having values selectable to meet the design constraints, the optimizing set including

4   optimizing parameters having values to be optimized.

1   14.   (AMENDED) The machine readable medium of claim 13 wherein the third

2   code segment comprises:

3   (c1)   a code segment to select values of the constraint parameters to meet

4   the design constraints;

5   (c2)   a code segment to determine values of the optimizing parameters

6   corresponding to the selected values of the constraint parameters based on the

7   parameter functions; and

8   (c3)   a code segment to iterate (c1) and (c2) until values of the optimizing

9   parameters are within a predetermined optimal range.

1   15.   The machine readable medium of claim 13 wherein the constraint

2   parameters include a delay parameter and the optimizing parameters include a power

3   parameter.

1   16.   The machine readable medium of claim 15 wherein the design constraints

2   include a delay constraint.

1   17.   (AMENDED) The machine readable medium of claim 16 wherein (a1)

2   comprises:

3   a code segment to size components in each circuit.

1   18.   (AMENDED) The machine readable medium of claim 16 wherein (a1)

2   comprises:

3   a code segment to select a design technology for each circuit, the design

4   technology being one of static and dynamic technologies.

1   19.   (AMENDED) The machine readable medium of claim 18 wherein (a2)

2   comprises:

3   (a21)   a code segment to generate a circuit netlist representing the

4   configured circuit;

5   (a22)   a code segment to generate a timing file based on the circuit netlist

6   using a circuit critical path;

7   (a23)   a code segment to determine power vectors of the configured circuit

8   based on the circuit netlist;

9   (a24)   a code segment to calculate timing values; and

10   (a25)   a code segment to calculate power values.

1   20.   (AMENDED) The machine readable medium of claim 19 wherein the

2   [second] third code segment comprises:

3   (c1)   a code segment to select values of the delay parameter within the

4   delay constraints;

5   (c2)   a code segment to determine values of the power parameter

6   corresponding to the selected values of the delay parameter based on the parameter

7   function; and

8   (c3)   a code segment to iterate (c1) and (c2) until values of the power

9   parameter are within a predetermined optimal range.

22.   (TWICE AMENDED) A system comprising:

2   a memory for storing program instructions;

3   a processor coupled to the memory to execute the program instructions, the

4   program instructions when executed by the processor interacting with tools

5   provided by a design environment causing the processor to at least

6   (a) create parameter functions for a plurality of circuits in a

7 subsystem, the subsystem having design constraints, each one of the

8 parameter functions corresponding to each one of the circuits, the parameter

9 functions representing a relationship among the design parameters,

10   (b) select initial design points for the parameter functions to

11 satisfy the design constraints; and

12   (c) select new design points for the parameter functions to

13 optimize design parameters within the design constraints.

1   23. (AMENDED) The system of claim 22 wherein the program instructions

2 causing the processor to create the parameter functions causes the processor to:

3   (a1) configure each circuit of the plurality of circuits; and

4   (a2) generate values of design parameters for each circuit according to

5 the configured circuit, the values providing the parameter functions.

1   24. The system of claim 22 wherein the design parameters include constraint

2 and optimizing sets, the constraint set including constraint parameters having values

3 selectable to meet the design constraints, the optimizing set including optimizing

4 parameters having values to be optimized.

1   25. (AMENDED) The system of claim 24 wherein the program instructions

2 causing the processor to select the new design points causes the processor to:

3   (c1)   select values of the constraint parameters to meet the design

4   constraints;

5   (c2) determine values of the optimizing parameters corresponding to the

6   selected values of the constraint parameters based on the parameter functions; and

7   (c3) iterate (c1) and (c2) until values of the optimizing parameters are

8   within a predetermined optimal range.

1   26.   The system of claim 24 wherein the constraint parameters include a delay

2   parameter and the optimizing parameters include a power parameter.

1   27.   The system of claim 26 wherein the design constraints include a delay

2   constraint.